

He continued to suffer from occasional attacks of rheumatic fever, and during the last year of his life was never quite well; but in spite of the great weakness under which he laboured, his overmastering passion for hard work would not be controlled. His health again gave away at the end of January, and he finally succumbed at one o'clock on the afternoon of February 16.

It was from a singularly clear and firm apprehension of the characteristic principles of modern meteorology, and an unflinching application of them to the facts of observation, that Capt. Hoffmeyer has left his mark on the science,—these principles being the relations of winds, temperature, and rainfall to the distribution of atmospheric pressure. In working out the weather problem of Europe, no country occupies a more splendid position for the observation of the required data than does Denmark with its dependencies of Farö, Iceland, and Greenland. Denmark was slow to occupy the field, nothing being done in this direction by the Danish Government prior to Hoffmeyer's appointment as Director of the Meteorological Institute. In a short time these important regions were represented by stations in Greenland, Iceland, and Farö. The meteorology of Denmark proper was pushed forward with great vigour. In truth, the monthly meteorological *Bulletin* of Denmark is in several respects among the best that reach us. The number for January, 1884, just received, presents the monthly results of pressure for 13 stations, temperature for 109 stations, and rainfall and other forms of precipitation for 159 stations. These results are graphically shown on four maps, accompanied with a full descriptive letter-press—one map giving the isobars for the month, another the isothermals, and on the same map the mean temperature at each of the 109 stations; a third map, the minimum temperature at each of the stations; while the fourth gives isohyetal lines showing the rainfall, and here again the amount at each of the 159 rain stations is entered in plain figures on the map. The educative effect of these instructive monthly sheets on a people whose industries are so largely pastoral and agricultural must be very great.

It was, however, to the department of meteorology which is concerned with the preparation and study of synoptic weather charts that Hoffmeyer chiefly directed his attention. The great services he rendered in this direction may be indicated by a reference to his atlas of daily weather maps of the Atlantic, embracing a period of fully three years, the expense of which was almost wholly borne by himself, and his annual reports giving tri-daily observations for the Denmark, Farö, Iceland, and Greenland stations—a work which no working meteorologist can afford to be without. It was arranged last summer to resume the publication of the synoptic charts in conjunction with Neumayer, and the work was so far advanced that the first sheets were printed off on February 17, the day after his death.

Of the positive additions Hoffmeyer made to science, the most noteworthy are his papers on the Greenland foehn (*NATURE*, vol. xvi. p. 294), and on the distribution of atmospheric pressure in winter over the North Atlantic, and its influence on the climate of Europe (*NATURE*, vol. xviii. p. 680). The latter is an original and highly important contribution to science, whether regard be had to the method of investigation or to the results. He showed that the character of the weather, as regards mildness or severity of the winter of the regions surrounding the North Atlantic, is really determined by the position of the region of minimum pressure, according as it is localised to the south-west of Ireland, in Davis Straits, or midway between Jan Mayen and the Lofoden Islands.

It was but fitting that he should have occupied the honourable position of Secretary to the International Polar Commission, one of the principal objects of which

was to collect materials for a satisfactory discussion of the different questions raised by the weather maps of the northern hemisphere. For this office the sincerity of his convictions, his honesty of purpose, and his business habits, eminently fitted him. To all who knew him, the memory of his eager readiness to assist fellow-workers, the urbanity of his manner, his joyous nature, and the unusual warmth of his friendship, cannot but awaken the keenest feelings of regret for his early death.

NOTES

As the British Association meets this year—its fifty-fourth—on August 27, in Montreal, preparations for the meeting have had to be made unusually early. Already everything is ready, and we are able to announce the lists of officials. President: the Right Hon. Lord Rayleigh, D.C.L., F.R.S., Professor of Experimental Physics in the University of Cambridge. Vice-Presidents: His Excellency the Governor-General of Canada; the Right Hon. Sir John Alexander Macdonald, K.C.B., D.C.L.; the Right Hon. Sir Lyon Playfair, K.C.B., M.P., F.R.S.; the Hon. Sir Alexander Tilloch Galt, G.C.M.G.; the Hon. Sir Charles Tupper, K.C.M.G.; Sir Narcisse Dorion, C.M.G.; the Hon. Dr. Chauveau; Principal J. W. Dawson, C.M.G., F.R.S.; Prof. Edward Frankland, M.D., D.C.L., F.R.S.; W. H. Hirst, M.D.; Thomas Sterry Hunt, LL.D., F.R.S. General Treasurer: Prof. A. W. Williamson, LL.D., F.R.S. General Secretaries: Capt. Douglas Galton, C.B., D.C.L., F.R.S.; A. G. Vernon Harcourt, F.R.S. Secretary: Prof. T. G. Bonney, D.Sc., F.R.S., P.G.S. Local Secretaries for the meeting at Montreal: L. E. Dawson, R. A. Ramsay, S. Rivard, S. C. Stevenson, Thomas White, M.P. Local Treasurer for the meeting at Montreal, F. Wolferstan Thomas. The Sections are the following:—A.—Mathematical and Physical Science.—President: Prof. Sir William Thomson, M.A., LL.D., D.C.L., F.R.S.S., L. and E., F.R.A.S. Vice-Presidents: Prof. J. B. Cherriman, M.A.; J. W. L. Glaisher, M.A., F.R.S., F.R.A.S. Secretaries: Charles H. Carpmael, M.A.; Prof. A. Johnson, M.A., LL.D.; Prof. O. J. Lodge, D.Sc.; D. MacAlister, M.A., M.B., B.Sc. (Recorder). B.—Chemical Science.—President: Prof. H. E. Roscoe, Ph.D., LL.D., F.R.S., F.C.S. Vice-Presidents: Prof. Dewar, M.A., F.R.S., F.C.S.; Prof. B. J. Harrington, B.A., Ph.D. Secretaries: Prof. P. Phillips Bedson, D.Sc., F.C.S. (Recorder); H. B. Dixon, M.A., F.C.S.; T. McFarlane, Prof. W. W. Pike. C.—Geology.—President: W. T. Blanford, F.R.S., F.G.S., F.R.G.S. Vice-Presidents: Prof. Rupert Jones, F.R.S., F.G.S.; A. R. C. Selwyn, LL.D., F.R.S., F.G.S. Secretaries: F. Adams, B.A., B.Sc.; G. M. Dawson, D.Sc., F.G.S.; W. Topley, F.G.S. (Recorder); W. Whitaker, B.A., F.G.S. D.—Biology.—President: Prof. H. N. Moseley, M.A., F.R.S., F.L.S., F.R.G.S., F.Z.S. Vice-Presidents: W. B. Carpenter, C.B., M.D., LL.D., F.R.S., F.L.S., F.G.S.; Prof. R. G. Lawson, Ph.D., LL.D. Secretaries: Prof. W. Osler, M.D.; Howard Saunders, F.L.S., F.Z.S. (Recorder); A. Sedgwick, B.A.; Prof. R. Ramsay Wright, M.A., B.Sc. E.—Geography.—Vice-Presidents: Col. Rhodes; P. L. Sclater, M.A., Ph.D., F.R.S., F.L.S., F.G.S., F.R.G.S. Secretaries: R. Bell, M.D., LL.D., F.G.S.; Rev. Abbé Lafflamme; E. G. Ravenstein, F.R.G.S.; E. C. Rye, F.Z.S. (Recorder). F.—Economic Science and Statistics.—President: Sir R. Temple, G.C.S.I., C.I.E., D.C.L., F.R.G.S. Vice-Presidents: J. B. Martin, F.S.S.; Prof. J. Clark Murray, LL.D. Secretaries: Prof. H. S. Foxwell, M.A., F.S.S.; J. S. McLennan, B.A.; Constantine Molloy (Recorder); Prof. J. Watson, M.A., LL.D. G.—Mechanical Science.—President: Sir F. J. Bramwell, F.R.S., M.Inst.C.E. Vice-Presidents: Prof. H. T. Bovey,

M.A.; P.G. B. Westmacott, M.Inst.C.E. Secretaries: A. T. Atchison, M.A., C.E.; J. Kennedy, C.E.; L. Lesage, C.E.; H. T. Wood, B.A. (Recorder). H.—Anthropology.—President: E. B. Tylor, D.C.L., LL.D., F.R.S. Vice-Presidents: Prof. W. Boyd Dawkins, M.A., F.R.S., F.S.A., F.G.S.; Prof. Daniel Wilson, LL.D., F.R.S.E. Secretaries: G. W. Bloxam, M.A., F.L.S. (Recorder); Rev. J. Campbell, M.A.; Walter Hurst, B.Sc.; J. M. P. Lemoine. It is expected that the public lectures will be by Mr. Crookes, Dr. Dallinger, and Prof. Ball. Liberal reductions of fares will be made by the steamship companies and the American railways; the Canadian Pacific Railway, indeed, gives free travelling to all members from August 1 to the time for the excursion to the Rocky Mountains, which it offers free to 150 members. Many other excursions have been arranged for, and the American Association invites the members to join its meetings and excursions at Philadelphia on September 3. We are glad to see that Section A is following the good example set by Prof. Lankester in Biology last year. A circular signed by Sir William Thomson has been issued by the Committee of Section A, inviting the co-operation of mathematicians and physicists, and requesting those willing to read papers and take part in the discussions to send their names to the Secretaries of Section A, British Association, Albemarle Street. The following subjects have been selected for special discussion by the Committee:—On Friday, August 29, The Seat of the Electromotive Forces in the Voltaic Cell. On Monday, September 1, The Connection of Sunspots with Terrestrial Phenomena.

THE death is announced on March 1 of Dr. Isaac Todhunter, F.R.S., the well-known mathematician, at his residence, Brookside, Cambridge. Dr. Todhunter was born in 1820, and having passed some years of his life as usher in a school, proceeded to University College, London, and when twenty-four years of age, entered as an undergraduate of St. John's. He graduated in the Mathematical Tripos of 1848, obtaining the distinction of Senior Wrangler and first Smith's Prizeman in a year which produced some remarkably able men. Dr. Todhunter was in due course elected to a Fellowship at St. John's, and subsequently filled the offices of assistant tutor and principal lecturer in mathematics. Dr. Todhunter is well known as the author of numerous mathematical treatises, which have obtained a wide circulation, and are recognised as standard works of education in the universities and public schools. His treatises on the "Differential Calculus," "Analytical Statics," "Plane Coordinate Geometry," "Plane Trigonometry," and "Spherical Trigonometry," greatly enhanced his reputation. He also published various elementary works, all of which enjoyed a large circulation. In 1871 he obtained the Adams Prize for an essay, "Researches on the Calculus of Variations." He published, in 1873, "A History of the Mathematical Theories of Attraction and the Figure of the Earth from the time of Newton to that of Laplace." In 1876 there also appeared from his pen, "An Account of the Writings of William Whewell, D.D., Master of Trinity College, with selections from his literary and scientific correspondence." By the new University statutes the University was authorised to confer the degrees of Doctor in Science and Doctor in Letters. Dr. Todhunter was among the first upon whom the distinction of Doctor in Science was conferred, and last year proceeded to that degree. A few years previously he had been elected an honorary Fellow of his College as a mark of recognition of his great mathematical attainments. It may be mentioned that Dr. Todhunter took an active part in University affairs, was a member of several Syndicates and Boards of Studies, and an elector to the Plumian Professorship of Astronomy. He had been in failing health for some time, and a few weeks ago was attacked with paralysis, which precluded all hope of recovery.

NATURAL HISTORY, and especially Palæontology, in Sicily, have sustained a great loss in the decease of the septuagenarian Abbé Brugnone, who died at Palermo on the 3rd of last month. He published several excellent papers on the recent and Pliocene shells of his native island, which were illustrated by his own pencil. His real name appears from the obituary card to have been Rugnone. We understand that his valuable collections are for sale.

M. FAYE read at the last meeting of the Academy of Sciences a draft of a resolution which will be presented by the Special Commission appointed to report on the removal of the Observatory, and which will be discussed by the Academy at one of its next private sittings. It approves the removal of the Observatory to a site in close proximity to Paris, and the sale of the grounds, on condition that the existing building will remain intact, and so much land as is necessary for executing astronomical observations in the establishment.

THE Academy of Sciences has nominated M. Darboux a member in the Section of Geometry. Mr. Darboux is the editor of a mathematical paper published in Paris, and the author of numerous memoirs on analysis and geometry printed in the *Transactions* of the Academy.

M. BERTRAND has issued the first number of a monthly astronomical journal published by the Observatory of Paris under the title of the *Bulletin*. It is edited by M. Tisserand, with the co-operation of a number of astronomers of the Paris Observatory.

UNDER the auspices of the Paris Geographical Society a course of lectures is being delivered by some of the most eminent French men of science. These lectures, eight in number, are held every Monday, at 8.30 p.m.; they began on February 11, and end on March 31, in the Hall of the Geographical Society. The following are the subjects of these lectures:—M. Faye, of the Institute, the connection of astronomy and geography in the principal periods of history; M. de Lapparent, M.E., reliefs of the globe; M. E. Fuchs, M.E., distribution of minerals; M. Mascart, director of the Meteorological Bureau, climate; M. Vélain, lecturer at the Sorbonne, glaciers and their action on the reliefs of the globe; M. Bureau, professor at the Museum of Natural History, geographical distribution of plants; M. Ed. Perrier, professor at the Museum of Natural History, the depths of the sea and their inhabitants; M. Alphonse Milne-Edwards, of the Institute, geographical distribution of animals. The course will be continued next year. Information respecting the above lectures, to which the public is admitted, may be had at the rooms of the Geographical Society, 184, Boulevard St. Germain.

THE Rev. Marc Dechevrens, S.J., of Zi-ka-wei Observatory, writes to us under date January 22, that the sky there continues to exhibit remarkable colours; during this winter the zodiacal light appeared to M. Dechevrens to be more feeble than in preceding years. He incloses a letter from Dr. D. J. Macgowan of Hankow to the *North China Daily News*:—"A phenomenon similar to the 'green sun in India' (observed at Ceylon from September 9 to 11 inclusive; from various portions of the Indian Ocean on the 10th and 13th; and at Trichinopoly, for some three weeks preceding October 2) has been witnessed several times at Hankow; on November 17 by the Rev. A. W. Nightingale, and on another occasion about the same time (date unrecorded), and again so recently as December 29 by the Rev. G. John and Rev. A. Foster. On these occasions the sun shortly before setting was of a pale green tint, the colour deepening as the orb declined; then followed an exhibition of the glowing redness of the western and southern horizon, which since the early part of December last has been observed from the sea-board far into the interior. Information from other parts of China respecting the 'green sun' is a desideratum."

THE latest official report on the condition of the districts overwhelmed by the Krakatoa eruption states that the surviving inhabitants of the various villages have reassembled under their headmen, and are erecting their huts. The volcanic ashes did little harm to the soil, the growing crops all presenting a luxuriant appearance. The trees, however, have suffered greatly, as had some of the coffee plantations. Two bays, Lampong and Semangka, which were blocked up by the fields of pumice, were free by the middle of December.

ON a summer night of 1882 a woman in Högsby parish, in Sweden, saw a shining object fall from the sky, disappearing behind a stable. Search was made for the meteorite, according to the statements of the woman, but without success. Last autumn it was, however, accidentally discovered near the spot indicated, and has now been forwarded to proper quarters in the town of Oskarshamn. The surface of the meteorite appears as if it had been welded from various substances; it is about the size of a billycock hat, very thick, and weighs a little over 14 lbs.

M. W. DE FONVIELLE writes:—"I took the liberty of suggesting in one of the last issues of the *Ville de Paris* a scheme for discovering clock-work in parcels deposited in luggage-rooms. All the luggage should be laid flat on wooden tables supported by iron feet, and not nailed to them; the least noise within the parcels would be made audible if a microphone of proper construction were placed on each table. The charge for keeping should be made heavier to diminish the number of parcels, and the right of opening optional with the railway companies."

THE Commission for Montsouris Observatory held its annual sitting at the end of February. It was resolved to ask from the Municipal Council an increase of the annual allocation, which is somewhat less than 1200*l.*, exclusive of some extra charges. But it is not supposed the request will be granted, and a diminution is rather expected. It must be remembered that meteorological observations are now conducted at Montsouris, at Parc Saint Maur, and at the Paris Observatory, almost on the same principles and with analogous instruments. It is curious to see this triple working by almost independent administrations.

THE long isolated kingdom of Corea having now been definitely opened by treaties to European trade and residence, we may soon expect English scholars to take their part in exploring its language, literature, and history. For the benefit of those about to study in the new field, it may be well to recall the fact that, so far, we are entirely dependent on French priests for the meagre knowledge we possess of the country. There is a paper in the *Transactions of the Royal Asiatic Society*, by Mr. Aston of Japan, on the Korean language, but the two works to which for some years to come European students must first resort are the Grammar and Dictionary edited by Msgr. Ridet, and published by Lévy of Yokohama. The latter appeared in 1879, and is a large volume of some 700 pages, containing about 30,000 words. The native words are accompanied not only by a French translation, but also by the Chinese characters representing them, so that the work can be used by a Chinese as well as a European, and, to those who already know Chinese or Japanese, an additional explanation is thus supplied. All that is known respecting the country to the priests—its fauna, flora, arts, manners, and customs—finds a place in the volume. An appendix gives a brief sketch of the grammar, while another contains the geography, the names, and position of the provinces, mountains, rivers, and chief towns. The Grammar was published last year, and contains an introduction on the character of the Korean language, and a comparison of it with Chinese, as well as appendices on the divisions of time, weights, measures, the mariner's compass, &c. Throughout the East the Catholic missionaries

have been the advanced guard of European science and methods of study. The volumes which they produced nearly a hundred years ago on China are still as necessary to thorough study of that country as they were then. The student who cannot refer to the original authorities, as, for instance, Chinese history, had, until the recent publication of Mr. Boulenger's work, to go to the long series of volumes published towards the close of the last century by the Société des Missions Étrangères under the editorship of de Mailla, Amyot, and other missionaries.

WE learn from *Science* that at 7.24 p.m. on January 25 earthquake waves were indicated by the delicate levels of the astronomical instruments of the San Francisco Observatory. The amplitude of each vibration was three seconds of arc in three seconds of time, and they continued for twenty minutes.

AT the last meeting of the Sociological (Spencerian) Section of the Birmingham Natural History Society it was decided to commence making an index to the study of Sociology. Letters were read from Mr. Spencer approving of the system about to be adopted, and stating that time and health had alone prevented him commencing such an undertaking previously.

THE Westphalian Provinzial Verein for Science and Art is about to publish a large work entitled "Westphalen's Thierleben in Wort und Bild." The Society also intends establishing a Provinzial Museum.

AT Berlin a branch of the German Meteorological Society was founded on January 29 last.

WE are pleased to learn that a complete catalogue of the Reference Department of the Nottingham Free Library is in course of preparation, but as that will be the work of some time, class lists have been issued for public use in the meantime. The publication noticed in these columns on January 31 was one of these, already supplemented considerably.

AT the suggestion of the Austrian Crown Prince, a work on the ethnography of the Empire is about to be written. Maurus Jokaj, the well-known Hungarian, has been intrusted with the task of editing it.

A SEVERE shock of earthquake, lasting two seconds, was felt at 4 a.m. on February 25 at Chios, Tchesme, and Vourla. So far as is known at present no damage has been done. An earthquake-wave, lasting about fifteen minutes, and inundating part of the town, was noticed at Montevideo on January 14, at 7.30 a.m. The weather was fine; the direction of the wave was from the Patagonian coast. Several people were drowned on the south side of the town.

THE death is announced of Prof. Heinrich Karl Berghaus, the well-known geographer and historian. Born at Kleve on May 3, 1797, he died at Stettin on February 17 last.

AN Engineering Exhibition will be held at Breslau from June 9 to 11 next.

THE additions to the Zoological Society's Gardens during the past week include a Grey Ichneumon (*Herpestes griseus*) from India, presented by Mr. J. B. Drew; an Arabian Gazelle (*Gazella arabica* ♀) from Arabia, presented by Lieut. Brown, R.N.; two Herring Gulls (*Larus argentatus*), European, presented by Mr. G. D. Macgregor; a Ring-necked Parrakeet (*Palzornis torquatus*) from India, presented by Mr. J. Biehl; a Black-headed Gull (*Larus ridibundus*), European, presented by Miss Elise Cooper; eight Hoary Snakes (*Coronella cana*) from South Africa, presented by Mr. C. B. Pillans; a Robben Island Snake (*Coronella phocorum*) from South Africa, presented by Mr. R. A. Robertson; a Common Heron (*Ardea cinerea*), a Gull Bunting (*Emberiza cirrus*), British, a Banded Parrakeet (*Palzornis fasciatus*) from India, purchased; three Mute Swans (*Cygnus olor*), European, received in exchange; eight Brown-tailed Gerbilles (*Gerbillus erythyrurus*), born in the Gardens.